In the claims:

1. (currently amended) A method for locating objects enclosed in a medium, according to which a detection signal is generated by at least one capacitive sensor device, the detection signal penetrating the medium that is to be analyzed in such a way that information is obtained about the objects that are enclosed in the medium by evaluating the detection signal, particularly by measuring impedance so that a value and a phase of a complex resistance are measured, wherein, to evaluate the detection signal, an algorithm is used that separates the measured signal into signal parts originating from the enclosing medium and signal parts originating from the object enclosed in the medium, and a location of the object is determined based on the signal parts originating from the enclosing medium and from the object.

2. (Original) The method as recited in Claim 1, wherein, to determine the part of the signal that originates from the enclosing medium, a model that has n parameters is used for the material of the enclosing medium.

3. (currently amended) The method as recited in Claim 2,

wherein the n parameters of the model for the enclosing medium are stored in the form of a program map and are capable of being queried by an evaluation algorithm <u>for evaluation of the measured signal</u>.

4. (Previously presented) The method as recited in Claim 2, wherein the parameters of the program map are obtained by performing n reference measurements at defined impedances.

5. (Original) The method as recited in Claim 4, wherein at least one reference measurement is carried out on a known reference material.

6. (currently amended) A method for locating objects enclosed in a medium, according to which a detection signal is generated by at least one capacitive sensor device, the detection signal penetrating the medium that is to be analyzed in such a way that information is obtained about the objects that are enclosed in the medium by evaluating the detection signal, particularly by measuring impedance so that a value and a phase of a complex resistance are measured, wherein, to evaluate the detection signal, an algorithm is used that separates the measured signal into signal parts originating from the enclosing medium and signal parts originating from the object enclosed in the medium wherein, to determine the part of the signal that originates from the enclosing medium,

a model that has n parameters is used for the material of the enclosing medium, wherein the parameters of the program map are obtained by performing n reference measurements at defined impedances, wherein at least one reference measurement is obtained by short-circuiting the detection signal, <u>and a location of the object is determined based on the signal parts originating from the enclosing medium and from the object.</u>

7. (Previously presented) The method as recited in claim 2, wherein, to determine the material of the enclosing medium, an interpolation of a material value that is measured for the enclosing medium with the n parameter values of the model is carried out, and the material of the enclosing medium is approximately determined using a reference optimization.

8. (Original) The method as recited in Claim 7, wherein a value for the dielectric constants of the material forming the enclosing medium is determined from the interpolation of a material value that is measured for the enclosing medium with the n parameter values of the model.

9. (Original) The method as recited in Claim 8,

wherein depth information about the object enclosed in the medium is obtained by using the dielectric constants of the material of the enclosing medium that were determined

10. (Original) The method as recited in Claim 9, wherein the depth information about the enclosed object is obtained using the dielectric constants of the enclosing medium from a phase measurement of that part of the measured signal that originates from the object enclosed in the medium.

11. (Previously presented) The method as recited in claim 1, wherein the signal is measured and evaluated as a function of a lateral displacement of the sensor device that is generating the detection signal.

12. (Previously presented) The method as recited in claim 1, wherein the signal is measured and evaluated as a function of more than one measuring frequency.

13. (Previously presented) A measuring device, in particular a hand-held locating device for locating objects enclosed in a medium, having a sensor device, with means for generating a detection signal for the sensor device, a control and evaluation unit for determining measured

values from the detection signal, and an output device for the determined measuring devices, for carrying out a method according to claim 1.

14. (Original) The measuring device as recited in Claim 13, wherein the measuring device includes at least one internal calibration device for a measured signal.

15. (Original) The measuring device as recited in Claim 14, wherein the calibration device enables measurement of at least one defined impedance.

16. (currently amended) A measuring device, in particular a hand-held locating device for locating objects enclosed in a medium, having a sensor device, with means for generating a detection signal for the sensor device, a control and evaluation unit for determining measured values from the detection signal, and an output device for the determined measuring devices, for carrying out a method for locating objects enclosed in a medium, according to which a detection signal is generated by at least one capacitive sensor device, the detection signal penetrating the medium that is to be analyzed in such a way that information is obtained about the objects that are enclosed in the medium by evaluating the detection signal, particularly by measuring impedance so that a value and a phase of a complex resistance are measured, wherein, to evaluate the detection

signal, an algorithm is used that separates the measured signal into signal parts originating from the enclosing medium and signal parts originating from the object enclosed in the medium, <u>and a location of the object is determined based on the signal parts originating from the enclosing medium and from the object</u> wherein the measuring device includes at least one internal calibration device for a measured signal, wherein the calibration device includes a short-circuit switch for generating a defined impedance.

17. (Previously presented) The measuring device as recited in Claim 14, wherein the measuring device includes switching means for temporary activation of the calibration device.

18. (Previously presented) The measuring device as recited in claim 13, wherein the measuring device includes means for saving material data, in particular dielectric constants, of known materials.

19. (Previously presented) The measuring device as recited in claim 13, wherein the measuring device includes means that permit calculated measured results, in particular the position and/or depth of an object enclosed in a medium, to be depicted in a spatially-resolved manner on a display device of the measuring device.

20. (previously presented) A method for locating objects enclosed in a medium, according to which a detection signal is generated by at least one capacitive sensor device, the detection signal penetrating the medium that is to be analyzed in such a way that information is obtained about the objects that are enclosed in the medium by evaluating the detection signal, particularly by measuring impedance, wherein a measuring signal as a function of a lateral displacement of the capacitive sensor device correlated to location and generating the detection signal is measured and evaluated ,~~and~~ wherein, to evaluate the detection signal, an algorithm is used that separates the measured signal into signal parts originating from the enclosing medium and signal parts originating from the object enclosed in the medium, and wherein a path sensor forwards a current position of the capacitive sensor device to a digital signal processor for depiction of a depth and a lateral position of the object.

21. (previously presented) A method as defined in claim 20; and further comprising displaying graphically a measured result on a display by displaying a position of the located object relative to the current position so that a size of the object and a depth of the object are depicted on the display using symbols in such a manner that an operator is provided with a cross-sectional representation of the medium, said displaying of the measured results on the display taking place in a real

time, so that the located object is depicted on the display with a minimum time delay while the sensor device is still being displaced.

22. (previously presented) A measuring device, in particular a hand-held locating device for locating objects enclosed in a medium, having a sensor device, with means for generating a detection signal for the sensor device, a control and evaluation unit for determining measured values from the detection signal, and an output device for the determined measuring devices, for carrying out a method according to claim 20.